

SEQUENCE LISTING

<110> Walke, D. Wade
Scoville, John

<120> Novel Human Membrane Proteins and Polynucleotides Encoding the Same

<130> LEX-0244-USA

<150> US 60/237,280

<151> 2000-10-02

<160> 33

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<211> 1734

<212> DNA

<213> homo sapiens

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gatgtatgtt	atattatcaa	gagcaaccct	attgcactca	ggtgcaaaagc	gaggccagcc	240
atgcagatat	tcttcaaatg	caacggcgag	tgggtccatc	agaacgagca	cgtctctgaa	300
gagactctgg	acgagagctc	aggtttgaag	gtccgcgaag	tgttcatcaa	tgttactagg	360
caacaggtgg	aggacttcca	tgggccccgag	gactattgg	gccagtgtgt	ggcgtggagc	420
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<213> homo sapiens

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Ala Pro Gly Thr Leu Pro His Phe Ile Glu Glu Pro Asp Asp Ala Tyr
50 55 60
Ile Ile Lys Ser Asn Pro Ile Ala Leu Arg Cys Lys Ala Arg Pro Ala
65 70 75 80
Met Gln Ile Phe Phe Lys Cys Asn Gly Glu Trp Val His Gln Asn Glu
85 90 95
His Val Ser Glu Glu Thr Leu Asp Glu Ser Ser Gly Leu Lys Val Arg
100 105 110
Glu Val Phe Ile Asn Val Thr Arg Gln Gln Val Glu Asp Phe His Gly
115 120 125
Pro Glu Asp Tyr Trp Cys Gln Cys Val Ala Trp Ser His Leu Gly Thr
130 135 140
Ser Lys Ser Arg Lys Ala Ser Val Arg Ile Ala Tyr Leu Arg Lys Asn
145 150 155 160
Phe Glu Gln Asp Pro Gln Gly Arg Glu Val Pro Ile Glu Gly Met Ile
165 170 175
Val Leu His Cys Arg Pro Pro Glu Gly Val Pro Ala Ala Glu Val Glu
180 185 190
Trp Leu Lys Asn Glu Glu Pro Ile Asp Ser Glu Gln Asp Glu Asn Ile
195 200 205
Asp Thr Arg Ala Asp His Asn Leu Ile Ile Arg Gln Ala Arg Leu Ser
210 215 220
Asp Ser Gly Asn Tyr Thr Cys Met Ala Ala Asn Ile Val Ala Lys Arg
225 230 235 240
Arg Ser Leu Ser Ala Thr Val Val Val Tyr Val Asp Gly Ser Trp Glu
245 250 255
Val Trp Ser Glu Trp Ser Val Cys Ser Pro Glu Cys Glu His Leu Arg
260 265 270
Ile Arg Glu Cys Thr Ala Pro Pro Arg Asn Gly Gly Lys Phe Cys
275 280 285
Glu Gly Leu Ser Gln Glu Ser Glu Asn Cys Thr Asp Gly Leu Cys Ile
290 295 300
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305 310 315 320
Ala Ser Asp Ile Ala Leu Tyr Ser Gly Leu Gly Ala Ala Val Val Ala
325 330 335
Val Ala Val Leu Val Ile Gly Val Thr Leu Tyr Arg Arg Ser Gln Ser
340 345 350
Asp Tyr Gly Val Asp Val Ile Asp Ser Ser Ala Leu Thr Gly Gly Phe
355 360 365
Gln Thr Phe Asn Phe Lys Thr Val Arg Gln Ala Lys Asn Ile Met Glu
370 375 380
Leu Met Ile Gln Glu Lys Ser Phe Gly Asn Ser Leu Leu Leu Asn Ser
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Ala Met Gln Pro Asp Leu Thr Val Ser Arg Thr Tyr Ser Gly Pro Ile
405 410 415
Cys Leu Gln Asp Pro Leu Asp Lys Glu Leu Met Thr Glu Ser Ser Leu

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Val Ser Leu Gly Val Ser Glu Arg Ala Glu Tyr His Gly Lys Asn His		
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Ser Arg Thr Phe Pro His Gly Asn Asn His Ser Phe Ser Thr Met His		
465	470	475
Pro Arg Asn Lys Met Pro Tyr Ile Gln Asn Leu Ser Ser Leu Pro Thr		
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Arg Thr Glu Leu Arg Thr Thr Gly Val Phe Gly His Leu Gly Gly Arg		
500	505	510
Leu Val Met Pro Asn Thr Gly Val Ser Leu Leu Ile Pro His Gly Ala		
515	520	525
Ile Pro Glu Glu Asn Ser Trp Glu Ile Tyr Met Ser Ile Asn Gln Gly		
530	535	540
Glu Pro Ser Glu Asn Pro Ala Asn Lys Gly Ser Asn Ser Leu Leu Lys		
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gatgatgtttt atattatcaa gagcaacccctt attgcactca ggtgcaaaagc gaggccagcc	240
atgcagatattt tcttcaaattt caacggcgag tgggtccatc agaacgagca cgtctctgaa	300
gagactctgg acgagagctc aggtttgaag gtccgcgaag tggcatcaaa tggtaacttagg	360
caacaggtgg aggacttcca tggggcccgag gactattgtt gccagtggtt ggcgtggagc	420
cacctgggta cctccaagag caggaaggcc tctgtgcgc tagcctattt acggaaaaac	480
tttgaacaag acccacaagg aaggaaatgtt cccattgaag gcatgattgtt actgcactgc	540
cggccaccag agggagtcgg tgctgcgcgg gtggatggc tgaaaaatga agagcccat	600
gactctgaac aagacgagaa cattgacacc aggctgacc ataacctgtt catcaggcag	660
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gctgccgtcg tggccgttgc agtccctgtc attgggttca ccctttacag acggagccag	1020
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cgcttagtaa tgccaaatac aggggtgagc ttactcatac cacacggtgc catcccagag	1560
gagaattttt gggagattta tatgtccatc aaccagggtt aaccaggatgtt aatccagca	1620
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1701

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<211> 566

<212> PRT

<213> homo sapiens

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35 40 45
Ala Pro Gly Thr Leu Pro His Phe Ile Glu Glu Pro Asp Asp Ala Tyr
50 55 60
Ile Ile Lys Ser Asn Pro Ile Ala Leu Arg Cys Lys Ala Arg Pro Ala
65 70 75 80
Met Gln Ile Phe Phe Lys Cys Asn Gly Glu Trp Val His Gln Asn Glu
85 90 95
His Val Ser Glu Glu Thr Leu Asp Glu Ser Ser Gly Leu Lys Val Arg
100 105 110
Glu Val Phe Ile Asn Val Thr Arg Gln Gln Val Glu Asp Phe His Gly
115 120 125
Pro Glu Asp Tyr Trp Cys Gln Cys Val Ala Trp Ser His Leu Gly Thr
130 135 140
Ser Lys Ser Arg Lys Ala Ser Val Arg Ile Ala Tyr Leu Arg Lys Asn
145 150 155 160
Phe Glu Gln Asp Pro Gln Gly Arg Glu Val Pro Ile Glu Gly Met Ile
165 170 175
Val Leu His Cys Arg Pro Pro Glu Gly Val Pro Ala Ala Glu Val Glu
180 185 190
Trp Leu Lys Asn Glu Glu Pro Ile Asp Ser Glu Gln Asp Glu Asn Ile
195 200 205
Asp Thr Arg Ala Asp His Asn Leu Ile Ile Arg Gln Ala Arg Leu Ser
210 215 220
Asp Ser Gly Asn Tyr Thr Cys Met Ala Ala Asn Ile Val Ala Lys Arg
225 230 235 240
Arg Ser Leu Ser Ala Thr Val Val Val Tyr Val Asp Gly Ser Trp Glu
245 250 255
Val Trp Ser Glu Trp Ser Val Cys Ser Pro Glu Cys Glu His Leu Arg
260 265 270
Ile Arg Glu Cys Thr Ala Pro Pro Arg Asn Gly Gly Lys Phe Cys
275 280 285
Glu Gly Leu Ser Gln Glu Ser Glu Asn Cys Thr Asp Gly Leu Cys Ile
290 295 300
Leu Gly Ile Glu Asn Ala Ser Asp Ile Ala Leu Tyr Ser Gly Leu Gly
305 310 315 320
Ala Ala Val Val Ala Val Ala Val Leu Val Ile Gly Val Thr Leu Tyr
325 330 335
Arg Arg Ser Gln Ser Asp Tyr Gly Val Asp Val Ile Asp Ser Ser Ala
340 345 350
Leu Thr Gly Gly Phe Gln Thr Phe Asn Phe Lys Thr Val Arg Gln Ala
355 360 365
Lys Asn Ile Met Glu Leu Met Ile Gln Glu Lys Ser Phe Gly Asn Ser
370 375 380

Leu Leu Leu Asn Ser Ala Met Gln Pro Asp Leu Thr Val Ser Arg Thr
 385 390 395 400
 Tyr Ser Gly Pro Ile Cys Leu Gln Asp Pro Leu Asp Lys Glu Leu Met
 405 410 415
 Thr Glu Ser Ser Leu Phe Asn Pro Leu Ser Asp Ile Lys Val Lys Val
 420 425 430
 Gln Ser Ser Phe Met Val Ser Leu Gly Val Ser Glu Arg Ala Glu Tyr
 435 440 445
 His Gly Lys Asn His Ser Arg Thr Phe Pro His Gly Asn Asn His Ser
 450 455 460
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 465 470 475 480
 Ser Ser Leu Pro Thr Arg Thr Glu Leu Arg Thr Thr Gly Val Phe Gly
 485 490 495
 His Leu Gly Gly Arg Leu Val Met Pro Asn Thr Gly Val Ser Leu Leu
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 Ile Pro His Gly Ala Ile Pro Glu Glu Asn Ser Trp Glu Ile Tyr Met
 515 520 525
 Ser Ile Asn Gln Gly Glu Pro Ser Glu Asn Pro Ala Asn Lys Gly Ser
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 His Leu Gly Ser Ser Arg
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<211> 1692

<212> DNA

<213> homo sapiens

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<212> PRT
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 Ile Ile Lys Ser Asn Pro Ile Ala Leu Arg Cys Lys Ala Arg Pro Ala
 65 70 75 80
 Met Gln Ile Phe Phe Lys Cys Asn Gly Glu Trp Val His Gln Asn Glu
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 His Val Ser Glu Glu Thr Leu Asp Glu Ser Ser Gly Leu Lys Val Arg
 100 105 110
 Glu Val Phe Ile Asn Val Thr Arg Gln Gln Val Glu Asp Phe His Gly
 115 120 125
 Pro Glu Asp Tyr Trp Cys Gln Cys Val Ala Trp Ser His Leu Gly Thr
 130 135 140
 Ser Lys Ser Arg Lys Ala Ser Val Arg Ile Ala Tyr Leu Arg Lys Asn
 145 150 155 160
 Phe Glu Gln Asp Pro Gln Gly Arg Glu Val Pro Ile Glu Gly Met Ile
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 Val Leu His Cys Arg Pro Pro Glu Gly Val Pro Ala Ala Glu Val Glu
 180 185 190
 Trp Leu Lys Asn Glu Glu Pro Ile Asp Ser Glu Gln Asp Glu Asn Ile
 195 200 205
 Asp Thr Arg Ala Asp His Asn Leu Ile Ile Arg Gln Ala Arg Leu Ser
 210 215 220
 Asp Ser Gly Asn Tyr Thr Cys Met Ala Ala Asn Ile Val Ala Lys Arg
 225 230 235 240
 Arg Ser Leu Ser Ala Thr Val Val Val Tyr Val Asp Gly Ser Trp Glu
 245 250 255
 Val Trp Ser Glu Trp Ser Val Cys Ser Pro Glu Cys Glu His Leu Arg
 260 265 270
 Ile Arg Glu Cys Thr Ala Pro Pro Pro Arg Asn Gly Gly Lys Phe Cys
 275 280 285
 Glu Gly Leu Ser Gln Glu Ser Glu Asn Cys Thr Asp Gly Leu Cys Ile
 290 295 300
 Leu Asp Lys Lys Pro Leu His Glu Ile Lys Pro Gln Ser Ile Glu Asn
 305 310 315 320
 Ala Ser Asp Ile Ala Leu Tyr Ser Gly Leu Gly Ala Ala Val Val Ala
 325 330 335
 Val Ala Val Leu Val Ile Gly Val Thr Leu Tyr Arg Arg Ser Gln Ser
 340 345 350
 Asp Tyr Gly Val Asp Val Ile Asp Ser Ser Ala Leu Thr Gly Gly Phe

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385	390	395
Pro Ile Cys Leu Gln Asp Pro Leu Asp Lys Glu Leu Met Thr Glu Ser		
405	410	415
Ser Leu Phe Asn Pro Leu Ser Asp Ile Lys Val Lys Val Gln Ser Ser		
420	425	430
Phe Met Val Ser Leu Gly Val Ser Glu Arg Ala Glu Tyr His Gly Lys		
435	440	445
Asn His Ser Arg Thr Phe Pro His Gly Asn Asn His Ser Phe Ser Thr		
450	455	460
Met His Pro Arg Asn Lys Met Pro Tyr Ile Gln Asn Leu Ser Ser Leu		
465	470	475
Pro Thr Arg Thr Glu Leu Arg Thr Thr Gly Val Phe Gly His Leu Gly		
485	490	495
Gly Arg Leu Val Met Pro Asn Thr Gly Val Ser Leu Leu Ile Pro His		
500	505	510
Gly Ala Ile Pro Glu Glu Asn Ser Trp Glu Ile Tyr Met Ser Ile Asn		
515	520	525
Gln Gly Glu Pro Ser Glu Asn Pro Ala Asn Lys Gly Ser Asn Ser Leu		
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Leu Lys Asn Thr Tyr Ala Ile Gly Gly Lys Ile Ser Arg His Leu Gly		
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<211> 1659

<212> DNA

<213> homo sapiens

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<212> PRT

<213> homo sapiens

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Ala Pro Gly Thr Leu Pro His Phe Ile Glu Glu Pro Asp Asp Ala Tyr	
50 55 60	
Ile Ile Lys Ser Asn Pro Ile Ala Leu Arg Cys Lys Ala Arg Pro Ala	
65 70 75 80	
Met Gln Ile Phe Phe Lys Cys Asn Gly Glu Trp Val His Gln Asn Glu	
85 90 95	
His Val Ser Glu Glu Thr Leu Asp Glu Ser Ser Gly Leu Lys Val Arg	
100 105 110	
Glu Val Phe Ile Asn Val Thr Arg Gln Gln Val Glu Asp Phe His Gly	
115 120 125	
Pro Glu Asp Tyr Trp Cys Gln Cys Val Ala Trp Ser His Leu Gly Thr	
130 135 140	
Ser Lys Ser Arg Lys Ala Ser Val Arg Ile Ala Tyr Leu Arg Lys Asn	
145 150 155 160	
Phe Glu Gln Asp Pro Gln Gly Arg Glu Val Pro Ile Glu Gly Met Ile	
165 170 175	
Val Leu His Cys Arg Pro Pro Glu Gly Val Pro Ala Ala Glu Val Glu	
180 185 190	
Trp Leu Lys Asn Glu Glu Pro Ile Asp Ser Glu Gln Asp Glu Asn Ile	
195 200 205	
Asp Thr Arg Ala Asp His Asn Leu Ile Ile Arg Gln Ala Arg Leu Ser	
210 215 220	
Asp Ser Gly Asn Tyr Thr Cys Met Ala Ala Asn Ile Val Ala Lys Arg	
225 230 235 240	
Arg Ser Leu Ser Ala Thr Val Val Val Tyr Val Asp Gly Ser Trp Glu	
245 250 255	
Val Trp Ser Glu Trp Ser Val Cys Ser Pro Glu Cys Glu His Leu Arg	
260 265 270	
Ile Arg Glu Cys Thr Ala Pro Pro Arg Asn Gly Gly Lys Phe Cys	
275 280 285	
Glu Gly Leu Ser Gln Glu Ser Glu Asn Cys Thr Asp Gly Leu Cys Ile	
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Ala Ala Val Val Ala Val Ala Val Leu Val Ile Gly Val Thr Leu Tyr	
325 330 335	
Arg Arg Ser Gln Ser Asp Tyr Gly Val Asp Val Ile Asp Ser Ser Ala	

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Arg Thr Tyr Ser Gly Pro Ile Cys Leu Gln Asp Pro Leu Asp Lys Glu			
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Lys Val Gln Ser Ser Phe Met Val Ser Leu Gly Val Ser Glu Arg Ala			
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Glu Tyr His Gly Lys Asn His Ser Arg Thr Phe Pro His Gly Asn Asn			
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His Ser Phe Ser Thr Met His Pro Arg Asn Lys Met Pro Tyr Ile Gln			
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Asn Leu Ser Ser Leu Pro Thr Arg Thr Glu Leu Arg Thr Thr Gly Val			
465	470	475	480
Phe Gly His Leu Gly Gly Arg Leu Val Met Pro Asn Thr Gly Val Ser			
485	490	495	
Leu Leu Ile Pro His Gly Ala Ile Pro Glu Glu Asn Ser Trp Glu Ile			
500	505	510	
Tyr Met Ser Ile Asn Gln Gly Glu Pro Ser Glu Asn Pro Ala Asn Lys			
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<211> 2736

<212> DNA

<213> homo sapiens

<400> 9

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gatgtgctt atattatcaa gagcaaccctt attgcactca ggtgcaaagc gaggccagcc	240
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gagactctgg acgagagctc aggtttgaag gtccgcgaag tggcatcaa tggtaactagg	360
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<212> PRT

<213> homo sapiens

<400> 10

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Ala	Arg	Gly	Thr	Asp	Asn	Gly	Glu	Ala	Leu	Pro	Glu	Ser	Ile	Pro	Ser	
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Ala	Pro	Gly	Thr	Leu	Pro	His	Phe	Ile	Glu	Glu	Pro	Asp	Asp	Ala	Tyr	
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Ile	Ile	Lys	Ser	Asn	Pro	Ile	Ala	Leu	Arg	Cys	Lys	Ala	Arg	Pro	Ala	
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Met	Gln	Ile	Phe	Phe	Lys	Cys	Asn	Gly	Glu	Trp	Val	His	Gln	Asn	Glu	
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His	Val	Ser	Glu	Glu	Thr	Leu	Asp	Glu	Ser	Ser	Gly	Leu	Lys	Val	Arg	
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Glu	Val	Phe	Ile	Asn	Val	Thr	Arg	Gln	Gln	Val	Glu	Asp	Phe	His	Gly	
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Pro	Glu	Asp	Tyr	Trp	Cys	Gln	Cys	Val	Ala	Trp	Ser	His	Leu	Gly	Thr	
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Ser	Lys	Ser	Arg	Lys	Ala	Ser	Val	Arg	Ile	Ala	Tyr	Leu	Arg	Lys	Asn	
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Phe	Glu	Gln	Asp	Pro	Gln	Gly	Arg	Glu	Val	Pro	Ile	Glu	Gly	Met	Ile	
								165			170			175		
Val	Leu	His	Cys	Arg	Pro	Pro	Glu	Gly	Val	Pro	Ala	Ala	Glu	Val	Glu	
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Trp	Leu	Lys	Asn	Glu	Glu	Pro	Ile	Asp	Ser	Glu	Gln	Asp	Glu	Asn	Ile	

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Asp Ser Gly Asn Tyr Thr Cys Met Ala Ala Asn Ile Val Ala Lys Arg			
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Arg Ser Leu Ser Ala Thr Val Val Val Tyr Val Asp Gly Ser Trp Glu			
245	250	255	
Val Trp Ser Glu Trp Ser Val Cys Ser Pro Glu Cys Glu His Leu Arg			
260	265	270	
Ile Arg Glu Cys Thr Ala Pro Pro Arg Asn Gly Gly Lys Phe Cys			
275	280	285	
Glu Gly Leu Ser Gln Glu Ser Glu Asn Cys Thr Asp Gly Leu Cys Ile			
290	295	300	
Leu Asp Lys Lys Pro Leu His Glu Ile Lys Pro Gln Ser Ile Glu Asn			
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Ala Ser Asp Ile Ala Leu Tyr Ser Gly Leu Gly Ala Ala Val Val Ala			
325	330	335	
Val Ala Val Leu Val Ile Gly Val Thr Leu Tyr Arg Arg Ser Gln Ser			
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Asp Tyr Gly Val Asp Val Ile Asp Ser Ser Ala Leu Thr Gly Gly Phe			
355	360	365	
Gln Thr Phe Asn Phe Lys Thr Val Arg Gln Ala Lys Asn Ile Met Glu			
370	375	380	
Leu Met Ile Gln Glu Lys Ser Phe Gly Asn Ser Leu Leu Leu Asn Ser			
385	390	395	400
Ala Met Gln Pro Asp Leu Thr Val Ser Arg Thr Tyr Ser Gly Pro Ile			
405	410	415	
Cys Leu Gln Asp Pro Leu Asp Lys Glu Leu Met Thr Glu Ser Ser Leu			
420	425	430	
Phe Asn Pro Leu Ser Asp Ile Lys Val Lys Val Gln Ser Ser Phe Met			
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Val Ser Leu Gly Val Ser Glu Arg Ala Glu Tyr His Gly Lys Asn His			
450	455	460	
Ser Arg Thr Phe Pro His Gly Asn Asn His Ser Phe Ser Thr Met His			
465	470	475	480
Pro Arg Asn Lys Met Pro Tyr Ile Gln Asn Leu Ser Ser Leu Pro Thr			
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Val Thr Cys Gly Pro Pro Asp Met Ile Val Thr Thr Pro Phe Ala Leu			
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Thr Ile Pro His Cys Ala Asp Val Ser Ser Glu His Trp Asn Ile His			
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Glu Asp Glu Ser Thr Ser Cys Tyr Cys Leu Leu Asp Pro Phe Ala Cys			
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Ile Thr Asp Cys Ala Val Lys Gln Leu Lys Val Ala Val Phe Gly Cys			

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Asn Thr Pro Cys Ala Phe Gln Glu Val Val Ser Asp Glu Arg His Gln			
675	680	685	
Gly Gly Gln Leu Leu Glu Glu Pro Lys Leu Leu His Phe Lys Gly Asn			
690	695	700	
Thr Phe Ser Leu Gln Ile Ser Val Leu Asp Ile Pro Pro Phe Leu Trp			
705	710	715	720
Arg Ile Lys Pro Phe Thr Ala Cys Gln Glu Val Pro Phe Ser Arg Val			
725	730	735	
Trp Cys Ser Asn Arg Gln Pro Leu His Cys Ala Phe Ser Leu Glu Arg			
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Tyr Thr Pro Thr Thr Gln Leu Ser Cys Lys Ile Cys Ile Arg Gln			
755	760	765	
Leu Lys Gly His Glu Gln Ile Leu Gln Val Gln Thr Ser Ile Leu Glu			
770	775	780	
Ser Glu Arg Glu Thr Ile Thr Phe Phe Ala Gln Glu Asp Ser Thr Phe			
785	790	795	800
Pro Ala Gln Thr Gly Pro Lys Ala Phe Lys Ile Pro Tyr Ser Ile Arg			
805	810	815	
Gln Arg Ile Cys Ala Thr Phe Asp Thr Pro Asn Ala Lys Gly Lys Asp			
820	825	830	
Trp Gln Met Leu Ala Gln Lys Asn Ser Ile Asn Arg Asn Leu Ser Tyr			
835	840	845	
Phe Ala Thr Gln Ser Ser Pro Ser Ala Val Ile Leu Asn Leu Trp Glu			
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gatgatgctt atattatcaa	gagcaaccct	attgcactca	240
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gagactctgg acgagagctc	aggttgaag	gtccgcgaag	360
caacaggtgg aggacttcca	tggcccgag	tggttcatcaa	420
cacctggta cctccaagag	caggaaggcc	tgttactagg	480
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 35 40 45
 Ala Pro Gly Thr Leu Pro His Phe Ile Glu Glu Pro Asp Asp Ala Tyr
 50 55 60
 Ile Ile Lys Ser Asn Pro Ile Ala Leu Arg Cys Lys Ala Arg Pro Ala
 65 70 75 80
 Met Gln Ile Phe Phe Lys Cys Asn Gly Glu Trp Val His Gln Asn Glu
 85 90 95
 His Val Ser Glu Glu Thr Leu Asp Glu Ser Ser Gly Leu Lys Val Arg
 100 105 110
 Glu Val Phe Ile Asn Val Thr Arg Gln Gln Val Glu Asp Phe His Gly
 115 120 125
 Pro Glu Asp Tyr Trp Cys Gln Cys Val Ala Trp Ser His Leu Gly Thr
 130 135 140
 Ser Lys Ser Arg Lys Ala Ser Val Arg Ile Ala Tyr Leu Arg Lys Asn

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Phe	Glu	Gln	Asp
Pro	Gln	Gly	Arg
Glu	Val	Pro	Ile
165	170	175	
Val	Leu	His	Cys
Arg	Pro	Pro	Glu
Gly	Val	Pro	Ala
Ala	Glu	Val	Glu
180	185	190	
Trp	Leu	Lys	Asn
Glu	Glu	Pro	Ile
Ile	Asp	Ser	Glu
Gln	Asp	Glu	Asn
Ile			
Asp	Thr	Arg	Ala
Asp	His	Asn	Leu
Ile	Ile	Arg	Gln
Gln	Ala	Arg	Leu
210	215	220	
Asp	Ser	Gly	Asn
Tyr	Thr	Cys	Met
Ala	Ala	Asn	Ile
Ile	Val	Ala	Lys
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Arg	Ser	Leu	Ser
Ala	Thr	Val	Val
Val	Tyr	Val	Asp
Gly	Ser	Trp	Glu
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Val	Trp	Ser	Glu
Trp	Ser	Val	Cys
Cys	Ser	Pro	Glu
Glu	Cys	Cys	Glu
His	Leu	Arg	
Ile	Arg	Glu	
Cys	Thr	Ala	
Pro	Pro	Pro	
Arg	Asn	Gly	
Gly	Lys	Phe	
Cys		Cys	
Glu	Gly	Leu	
Leu	Ser	Gln	
Glu	Ser	Glu	
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Ile	Ala	Leu	
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Leu	Gly	Leu	
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Val	Ala	Val	
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Val	Ile	Val	
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Ile	Asp	Ser	
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Gly	Phe	Gln	
Thr	Phe	Asn	
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Asn	Ser	Ala	
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Tyr	Ser	Gly	
Pro	Ile	Cys	
Leu	Gln	Asp	
Asp	Pro	Leu	
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Thr	Glu	Ser	
Ser	Leu	Phe	
Asn	Pro	Asp	
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Gln	Ser	Ser	
Phe	Met	Val	
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Ser	Leu	Ser	
Gly	Arg	Gly	
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His	Gly	Lys	
Lys	Asn	His	
His	Ser	Arg	
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Phe	Ser	Thr	
Thr	Met	His	
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Ser	Ser	Leu	
Leu	Pro	Thr	
Arg	Thr	Glu	
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His	Leu	Gly	
Gly	Arg	Leu	
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Glu	Asn	Ser	
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Ser	Ile	Asn	
Gln	Gly	Glu	
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Leu	Leu	Ser	
Pro	Glu	Val	
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Thr	Pro	Phe	
Ala	Leu	Thr	
Leu	Ile	Pro	
His	Cys	Asp	
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His	Trp	Asn	
Ile	His	Leu	
Lys	Lys	Arg	
Arg	Thr	Gln	
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Glu	Val	Met	
Met	Ser	Val	
Glu	Asp	Glu	
Ser	Thr	Ser	
Tyr	Ser	Cys	
Cys	Tyr	Cys	
Leu	Leu		

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Leu Thr Gly Glu Pro Ile Thr Asp Cys Ala Val	Lys Gln Leu Lys Val		
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Ala Val Phe Gly Cys Met Ser Cys Asn Ser Leu Asp Tyr Asn Leu Arg			
645	650	655	
Val Tyr Cys Val Asp Asn Thr Pro Cys Ala Phe Gln Glu Val Val Ser			
660	665	670	
Asp Glu Arg His Gln Gly Gly Gln Leu Leu Glu Glu Pro Lys Leu Leu			
675	680	685	
His Phe Lys Gly Asn Thr Phe Ser Leu Gln Ile Ser Val Leu Asp Ile			
690	695	700	
Pro Pro Phe Leu Trp Arg Ile Lys Pro Phe Thr Ala Cys Gln Glu Val			
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Pro Phe Ser Arg Val Trp Cys Ser Asn Arg Gln Pro Leu His Cys Ala			
725	730	735	
Phe Ser Leu Glu Arg Tyr Thr Pro Thr Thr Gln Leu Ser Cys Lys			
740	745	750	
Ile Cys Ile Arg Gln Leu Lys Gly His Glu Gln Ile Leu Gln Val Gln			
755	760	765	
Thr Ser Ile Leu Glu Ser Glu Arg Glu Thr Ile Thr Phe Phe Ala Gln			
770	775	780	
Glu Asp Ser Thr Phe Pro Ala Gln Thr Gly Pro Lys Ala Phe Lys Ile			
785	790	795	800
Pro Tyr Ser Ile Arg Gln Arg Ile Cys Ala Thr Phe Asp Thr Pro Asn			
805	810	815	
Ala Lys Gly Lys Asp Trp Gln Met Leu Ala Gln Lys Asn Ser Ile Asn			
820	825	830	
Arg Asn Leu Ser Tyr Phe Ala Thr Gln Ser Ser Pro Ser Ala Val Ile			
835	840	845	
Leu Asn Leu Trp Glu Ala Arg His Gln His Asp Gly Asp Leu Asp Ser			
850	855	860	
Leu Ala Cys Ala Leu Glu Ile Gly Arg Thr His Thr Lys Leu Ser			
865	870	875	880
Asn Ile Ser Glu Ser Gln Leu Asp Glu Ala Asp Phe Asn Tyr Ser Arg			
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Gln Asn Gly Leu			
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<211> 2694

<212> DNA

<213> homo sapiens

<400> 13

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<211> 897

<212> PRT

<213> homo sapiens

<400> 14

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Ala	Arg	Gly	Thr	Asp	Asn	Gly	Glu	Ala	Leu	Pro	Glu	Ser	Ile	Pro	Ser	
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 Pro Glu Asp Tyr Trp Cys Gln Cys Val Ala Trp Ser His Leu Gly Thr
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 Ser Lys Ser Arg Lys Ala Ser Val Arg Ile Ala Tyr Leu Arg Lys Asn
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 Phe Glu Gln Asp Pro Gln Gly Arg Glu Val Pro Ile Glu Gly Met Ile
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 Val Leu His Cys Arg Pro Pro Glu Gly Val Pro Ala Ala Glu Val Glu
 180 185 190
 Trp Leu Lys Asn Glu Glu Pro Ile Asp Ser Glu Gln Asp Glu Asn Ile
 195 200 205
 Asp Thr Arg Ala Asp His Asn Leu Ile Arg Gln Ala Arg Leu Ser
 210 215 220
 Asp Ser Gly Asn Tyr Thr Cys Met Ala Ala Asn Ile Val Ala Lys Arg
 225 230 235 240
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 Val Trp Ser Glu Trp Ser Val Cys Ser Pro Glu Cys Glu His Leu Arg
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 Ile Arg Glu Cys Thr Ala Pro Pro Pro Arg Asn Gly Gly Lys Phe Cys
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 Glu Gly Leu Ser Gln Glu Ser Glu Asn Cys Thr Asp Gly Leu Cys Ile
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 Asp Tyr Gly Val Asp Val Ile Asp Ser Ser Ala Leu Thr Gly Gly Phe
 355 360 365
 Gln Thr Phe Asn Phe Lys Thr Val Arg Gln Gly Asn Ser Leu Leu Leu
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 Phe Met Val Ser Leu Gly Val Ser Glu Arg Ala Glu Tyr His Gly Lys
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 Gln Gly Glu Pro Ser Leu Gln Ser Asp Gly Ser Glu Val Leu Leu Ser
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 Pro Glu Val Thr Cys Gly Pro Pro Asp Met Ile Val Thr Thr Pro Phe
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 Ser Val Glu Asp Glu Ser Thr Ser Cys Tyr Cys Leu Leu Asp Pro Phe
 595 600 605
 Ala Cys His Val Leu Leu Asp Ser Phe Gly Thr Tyr Ala Leu Thr Gly
 610 615 620
 Glu Pro Ile Thr Asp Cys Ala Val Lys Gln Leu Lys Val Ala Val Phe
 625 630 635 640
 Gly Cys Met Ser Cys Asn Ser Leu Asp Tyr Asn Leu Arg Val Tyr Cys
 645 650 655
 Val Asp Asn Thr Pro Cys Ala Phe Gln Glu Val Val Ser Asp Glu Arg
 660 665 670
 His Gln Gly Gly Gln Leu Leu Glu Glu Pro Lys Leu Leu His Phe Lys
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 Gly Asn Thr Phe Ser Leu Gln Ile Ser Val Leu Asp Ile Pro Pro Phe
 690 695 700
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 740 745 750
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 Leu Glu Ser Glu Arg Glu Thr Ile Thr Phe Phe Ala Gln Glu Asp Ser
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 Ser Tyr Phe Ala Thr Gln Ser Ser Pro Ser Ala Val Ile Leu Asn Leu
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 Trp Glu Ala Arg His Gln His Asp Gly Asp Leu Asp Ser Leu Ala Cys
 850 855 860
 Ala Leu Glu Glu Ile Gly Arg Thr His Thr Lys Leu Ser Asn Ile Ser
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 <213> homo sapiens

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 35 40 45
 Ala Pro Gly Thr Leu Pro His Phe Ile Glu Glu Pro Asp Asp Ala Tyr
 50 55 60
 Ile Ile Lys Ser Asn Pro Ile Ala Leu Arg Cys Lys Ala Arg Pro Ala

65	70	75	80
Met Gln Ile Phe Phe Lys Cys Asn Gly Glu Trp Val His Gln Asn Glu			
85	90	95	
His Val Ser Glu Glu Thr Leu Asp Glu Ser Ser Gly Leu Lys Val Arg			
100	105	110	
Glu Val Phe Ile Asn Val Thr Arg Gln Gln Val Glu Asp Phe His Gly			
115	120	125	
Pro Glu Asp Tyr Trp Cys Gln Cys Val Ala Trp Ser His Leu Gly Thr			
130	135	140	
Ser Lys Ser Arg Lys Ala Ser Val Arg Ile Ala Tyr Leu Arg Lys Asn			
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Phe Glu Gln Asp Pro Gln Gly Arg Glu Val Pro Ile Glu Gly Met Ile			
165	170	175	
Val Leu His Cys Arg Pro Pro Glu Gly Val Pro Ala Ala Glu Val Glu			
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Trp Leu Lys Asn Glu Glu Pro Ile Asp Ser Glu Gln Asp Glu Asn Ile			
195	200	205	
Asp Thr Arg Ala Asp His Asn Leu Ile Ile Arg Gln Ala Arg Leu Ser			
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Asp Ser Gly Asn Tyr Thr Cys Met Ala Ala Asn Ile Val Ala Lys Arg			
225	230	235	240
Arg Ser Leu Ser Ala Thr Val Val Val Tyr Val Asp Gly Ser Trp Glu			
245	250	255	
Val Trp Ser Glu Trp Ser Val Cys Ser Pro Glu Cys Glu His Leu Arg			
260	265	270	
Ile Arg Glu Cys Thr Ala Pro Pro Arg Asn Gly Gly Lys Phe Cys			
275	280	285	
Glu Gly Leu Ser Gln Glu Ser Glu Asn Cys Thr Asp Gly Leu Cys Ile			
290	295	300	
Leu Gly Ile Glu Asn Ala Ser Asp Ile Ala Leu Tyr Ser Gly Leu Gly			
305	310	315	320
Ala Ala Val Val Ala Val Ala Val Leu Val Ile Gly Val Thr Leu Tyr			
325	330	335	
Arg Arg Ser Gln Ser Asp Tyr Gly Val Asp Val Ile Asp Ser Ser Ala			
340	345	350	
Leu Thr Gly Gly Phe Gln Thr Phe Asn Phe Lys Thr Val Arg Gln Gly			
355	360	365	
Asn Ser Leu Leu Leu Asn Ser Ala Met Gln Pro Asp Leu Thr Val Ser			
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Arg Thr Tyr Ser Gly Pro Ile Cys Leu Gln Asp Pro Leu Asp Lys Glu			
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Leu Met Thr Glu Ser Ser Leu Phe Asn Pro Leu Ser Asp Ile Lys Val			
405	410	415	
Lys Val Gln Ser Ser Phe Met Val Ser Leu Gly Val Ser Glu Arg Ala			
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Glu Tyr His Gly Lys Asn His Ser Arg Thr Phe Pro His Gly Asn Asn			
435	440	445	
His Ser Phe Ser Thr Met His Pro Arg Asn Lys Met Pro Tyr Ile Gln			
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Phe Gly His Leu Gly Gly Arg Leu Val Met Pro Asn Thr Gly Val Ser			
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Leu Leu Ile Pro His Gly Ala Ile Pro Glu Glu Asn Ser Trp Glu Ile			
500	505	510	
Tyr Met Ser Ile Asn Gln Gly Glu Pro Ser Leu Gln Ser Asp Gly Ser			

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Trp	Glu	Glu	Val	Met	Ser	Val	Glu	Asp	Glu	Ser	Thr	Ser	Cys	Tyr	Cys	
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Leu	Leu	Asp	Pro	Phe	Ala	Cys	His	Val	Leu	Leu	Asp	Ser	Phe	Gly	Thr	
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Tyr	Ala	Leu	Thr	Gly	Glu	Pro	Ile	Thr	Asp	Cys	Ala	Val	Lys	Gln	Leu	
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Lys	Val	Ala	Val	Phe	Gly	Cys	Met	Ser	Cys	Asn	Ser	Leu	Asp	Tyr	Asn	
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Val	Ser	Asp	Glu	Arg	His	Gln	Gly	Gly	Gln	Leu	Leu	Glu	Glu	Pro	Lys	
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Leu	Leu	His	Phe	Lys	Gly	Asn	Thr	Phe	Ser	Leu	Gln	Ile	Ser	Val	Leu	
						675		680				685				
Asp	Ile	Pro	Pro	Phe	Leu	Trp	Arg	Ile	Lys	Pro	Phe	Thr	Ala	Cys	Gln	
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Glu	Val	Pro	Phe	Ser	Arg	Val	Trp	Cys	Ser	Asn	Arg	Gln	Pro	Leu	His	
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Cys	Ala	Phe	Ser	Leu	Glu	Arg	Tyr	Thr	Pro	Thr	Thr	Thr	Gln	Leu	Ser	
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Cys	Lys	Ile	Cys	Ile	Arg	Gln	Leu	Lys	Gly	His	Glu	Gln	Ile	Leu	Gln	
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Val	Gln	Thr	Ser	Ile	Leu	Glu	Ser	Glu	Arg	Glu	Thr	Ile	Thr	Phe	Phe	
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Ala	Gln	Glu	Asp	Ser	Thr	Phe	Pro	Ala	Gln	Thr	Gly	Pro	Lys	Ala	Phe	
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Lys	Ile	Pro	Tyr	Ser	Ile	Arg	Gln	Arg	Ile	Cys	Ala	Thr	Phe	Asp	Thr	
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Pro	Asn	Ala	Lys	Gly	Lys	Asp	Trp	Gln	Met	Leu	Ala	Gln	Lys	Asn	Ser	
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Ile	Asn	Arg	Asn	Leu	Ser	Tyr	Phe	Ala	Thr	Gln	Ser	Ser	Pro	Ser	Ala	
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Val	Ile	Leu	Asn	Leu	Trp	Glu	Ala	Arg	His	Gln	His	Asp	Gly	Asp	Leu	
						835		840				845				
Asp	Ser	Leu	Ala	Cys	Ala	Leu	Glu	Ile	Gly	Arg	Thr	His	Thr	Lys		
						850		855				860				
Leu	Ser	Asn	Ile	Ser	Glu	Ser	Gln	Leu	Asp	Glu	Ala	Asp	Phe	Asn	Tyr	
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60

120

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ctctttaacc	cttgcggca	catcaaagtg	aaagtccaga	gctcggtcat	ggtttccctg	660
ggagtgtctg	agagagctga	gtaccacggc	aagaatcatt	ccaggactt	tcccccattgg	720
aacaaccaca	gcttagtac	aatgcatccc	agaaataaaa	tgccctacat	ccaaaatctg	780
tcatcactcc	ccacaaggac	agaactgagg	acaactggtg	tcttggcca	tttagggggg	840
cgcttagtaa	tgccaaatac	aggggtgagc	ttactcatac	cacacggtgc	catcccagag	900
gagaattctt	gggagattta	tatgtccatc	aaccaagggt	aaccagtga	aaatccagca	960
aacaaaggat	caaatacgctt	gttgaagaac	acatatgcca	ttgggggaaa	aataagcaga	1020
catctgggtt	cttctcgctg	a				1041

<210> 18

<211> 346

<212> PRT

<213> homo sapiens

<400> 18

Met	Ala	Ala	Asn	Ile	Val	Ala	Lys	Arg	Arg	Ser	Leu	Ser	Ala	Thr	Val
1															
														15	
Val	Val	Tyr	Val	Asp	Gly	Ser	Trp	Glu	Val	Trp	Ser	Glu	Trp	Ser	Val
														30	
20															
Cys	Ser	Pro	Glu	Cys	Glu	His	Leu	Arg	Ile	Arg	Glu	Cys	Thr	Ala	Pro
35														45	
Pro	Pro	Arg	Asn	Gly	Gly	Lys	Phe	Cys	Glu	Gly	Leu	Ser	Gln	Glu	Ser
50														60	
Glu	Asn	Cys	Thr	Asp	Gly	Leu	Cys	Ile	Leu	Asp	Lys	Lys	Pro	Leu	His
65														80	
Glu	Ile	Lys	Pro	Gln	Ser	Ile	Glu	Asn	Ala	Ser	Asp	Ile	Ala	Leu	Tyr
85														95	
Ser	Gly	Leu	Gly	Ala	Ala	Val	Val	Ala	Val	Ala	Val	Leu	Val	Ile	Gly
100														110	
Val	Thr	Leu	Tyr	Arg	Arg	Ser	Gln	Ser	Asp	Tyr	Gly	Val	Asp	Val	Ile
115														125	
Asp	Ser	Ser	Ala	Leu	Thr	Gly	Gly	Phe	Gln	Thr	Phe	Asn	Phe	Lys	Thr
130														140	
Val	Arg	Gln	Ala	Lys	Asn	Ile	Met	Glu	Leu	Met	Ile	Gln	Glu	Lys	Ser
145														160	
Phe	Gly	Asn	Ser	Leu	Leu	Leu	Asn	Ser	Ala	Met	Gln	Pro	Asp	Leu	Thr
165														175	
Val	Ser	Arg	Thr	Tyr	Ser	Gly	Pro	Ile	Cys	Leu	Gln	Asp	Pro	Leu	Asp
180														190	
Lys	Glu	Leu	Met	Thr	Glu	Ser	Ser	Leu	Phe	Asn	Pro	Leu	Ser	Asp	Ile
195														205	
Lys	Val	Lys	Val	Gln	Ser	Ser	Phe	Met	Val	Ser	Leu	Gly	Val	Ser	Glu
210														220	
Arg	Ala	Glu	Tyr	His	Gly	Lys	Asn	His	Ser	Arg	Thr	Phe	Pro	His	Gly
225														240	
Asn	Asn	His	Ser	Phe	Ser	Thr	Met	His	Pro	Arg	Asn	Lys	Met	Pro	Tyr
245														255	
Ile	Gln	Asn	Leu	Ser	Ser	Leu	Pro	Thr	Arg	Thr	Glu	Leu	Arg	Thr	Thr

260	265	270	
Gly Val Phe Gly His Leu Gly Gly Arg Leu Val Met Pro Asn Thr Gly			
275	280	285	
Val Ser Leu Leu Ile Pro His Gly Ala Ile Pro Glu Glu Asn Ser Trp			
290	295	300	
Glu Ile Tyr Met Ser Ile Asn Gln Gly Glu Pro Ser Glu Asn Pro Ala			
305	310	315	320
Asn Lys Gly Ser Asn Ser Leu Leu Lys Asn Thr Tyr Ala Ile Gly Gly			
325	330	335	
Lys Ile Ser Arg His Leu Gly Ser Ser Arg			
340	345		

<210> 19

<211> 1008

<212> DNA

<213> homo sapiens

<400> 19

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gatgggagct gggaaagtgtg gagcgaatgg tccgtctgca gtccagagtg tgaacatgg	120
cggatccggg agtgcacagc accacccccc agaaatgggg gcaaattctg tgaaggctca	180
agccaggaat ctgaaaactg cacagatggt cttgcattcc taggcattga gaatgccagc	240
gacattgctt tgcactcggt cttgggtgct gccgtcgtgg ccgttgcagt cctggtcatt	300
ggtgtcaccc ttacagacg gagccagagt gactatggcg tggacgtcat tgactcttct	360
gcattgacag gtggcttcca gaccttcaac ttcaaaacag tccgtcaagc caagaatatc	420
atggaactaa tgatacaaga aaaatccccc ggtactccc tgctcctgaa ttctgcccatt	480
cagccagatc tgacagttag cggacatac agccggaccca tctgtctgca ggaccctctg	540
gacaaggagc tcatgacaga gtcctcactc tttaaccctt tgcggacat caaagtgaaa	600
gtccagagct cgttcatggt ttccctggga gtgtctgaga gagctgagta ccacggcaag	660
aatcattcca ggactttcc ccatggaaac aaccacagct ttagtacaat gcatcccaga	720
aataaaatgc cctacatcca aatctgtca tcactccca caaggacaga actgaggaca	780
actgggtct ttggccattt agggggggc ttagtaatgc caaatacagg ggtgagctt	840
ctcataaccac acggtgccat cccagaggag aattcttggg agatttatat gtccatcaac	900
caaggtgaac ccagtgaaaa tccagcaaac aaaggatcaa atagcttggt gaagaacaca	960
tatgccattt gggaaaaat aagcagacat ctgggttctt ctcgctga	1008

<210> 20

<211> 335

<212> PRT

<213> homo sapiens

<400> 20

Met Ala Ala Asn Ile Val Ala Lys Arg Arg Ser Leu Ser Ala Thr Val			
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Val Val Tyr Val Asp Gly Ser Trp Glu Val Trp Ser Glu Trp Ser Val			
20	25	30	
Cys Ser Pro Glu Cys Glu His Leu Arg Ile Arg Glu Cys Thr Ala Pro			
35	40	45	
Pro Pro Arg Asn Gly Gly Lys Phe Cys Glu Gly Leu Ser Gln Glu Ser			
50	55	60	
Glu Asn Cys Thr Asp Gly Leu Cys Ile Leu Gly Ile Glu Asn Ala Ser			
65	70	75	80
Asp Ile Ala Leu Tyr Ser Gly Leu Gly Ala Ala Val Val Ala Val Ala			
85	90	95	
Val Leu Val Ile Gly Val Thr Leu Tyr Arg Arg Ser Gln Ser Asp Tyr			
100	105	110	

Gly	Val	Asp	Val	Ile	Asp	Ser	Ser	Ala	Leu	Thr	Gly	Gly	Phe	Gln	Thr
115											125				
Phe	Asn	Phe	Lys	Thr	Val	Arg	Gln	Ala	Lys	Asn	Ile	Met	Glu	Leu	Met
130											135				140
Ile	Gln	Glu	Lys	Ser	Phe	Gly	Asn	Ser	Leu	Leu	Leu	Asn	Ser	Ala	Met
145											150				155
Gln	Pro	Asp	Leu	Thr	Val	Ser	Arg	Thr	Tyr	Ser	Gly	Pro	Ile	Cys	Leu
											165				170
Gln	Asp	Pro	Leu	Asp	Lys	Glu	Leu	Met	Thr	Glu	Ser	Ser	Leu	Phe	Asn
											180				185
Pro	Leu	Ser	Asp	Ile	Lys	Val	Lys	Val	Gln	Ser	Ser	Phe	Met	Val	Ser
											195				200
															205
Leu	Gly	Val	Ser	Glu	Arg	Ala	Glu	Tyr	His	Gly	Lys	Asn	His	Ser	Arg
											210				215
Thr	Phe	Pro	His	Gly	Asn	Asn	His	Ser	Phe	Ser	Thr	Met	His	Pro	Arg
											225				230
															235
Asn	Lys	Met	Pro	Tyr	Ile	Gln	Asn	Leu	Ser	Ser	Leu	Pro	Thr	Arg	Thr
											245				250
															255
Glu	Leu	Arg	Thr	Gly	Val	Phe	Gly	His	Leu	Gly	Gly	Arg	Leu	Val	
											260				265
															270
Met	Pro	Asn	Thr	Gly	Val	Ser	Leu	Leu	Ile	Pro	His	Gly	Ala	Ile	Pro
											275				280
															285
Glu	Glu	Asn	Ser	Trp	Glu	Ile	Tyr	Met	Ser	Ile	Asn	Gln	Gly	Glu	Pro
											290				295
															300
Ser	Glu	Asn	Pro	Ala	Asn	Lys	Gly	Ser	Asn	Ser	Leu	Leu	Lys	Asn	Thr
											305				310
															315
Tyr	Ala	Ile	Gly	Gly	Ile	Ser	Arg	His	Leu	Gly	Ser	Ser	Arg		
											325				330
															335

<210> 21

<211> 999

<212> DNA

<213> homo sapiens

<400> 21

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cgatccggg	agtgcacagc	accacccccc	agaaatgggg	gcaaattctg	tgaaggctcta	180
agccaggaat	ctgaaaactg	cacagatgtt	cttgcattcc	tagataaaaa	accttcttcat	240
gaaataaaac	cccaaagcat	tgagaatgcc	agcgcatttg	ctttgtactc	gggcttgggt	300
gctgccgtcg	tggccgttgc	agtcctggtc	attgggtgtca	ccctttacag	acggagccag	360
agtactatg	gcgtggacgt	cattgactct	tctgcattga	caggtggctt	ccagacccctc	420
aacttcaaaa	cagtcgtca	aggtaactcc	ctgctcctga	attctgccat	gcagccagat	480
ctgacagtga	gccggacata	cagcggaccc	atctgtctgc	aggaccctct	ggacaaggag	540
ctcatgacag	agtccctca	tttaaccct	ttgtcgacca	tcaaagtgaa	agtccagagc	600
tcgttcatgg	ttcccttggg	agttgtctgag	agagctgagt	accacggcaa	gaatcattcc	660
aggactttc	cccatggaaa	caaccacagc	tttagtacaa	tgcattccag	aaataaaaatg	720
ccctacatcc	aaaatctgtc	atcaactcccc	acaaggacag	aactgaggac	aactgggtgtc	780
tttggccatt	tagggggcg	cttagtaatg	ccaaatacag	gggtgagctt	actcatacca	840
cacggtgcca	tcccagagga	gaattcttgg	gagattata	tgtccatcaa	ccaagggtgaa	900
cccagtgaaa	atccagcaa	caaaggatca	aatagcttgt	tgaagaacac	atatgccatt	960
ggggaaaaaa	taagcagaca	tctgggtct	tctcgctga			999

<210> 22

<211> 332

<212> PRT

<213> homo sapiens

<400> 22

Met Ala Ala Asn Ile Val Ala Lys Arg Arg Ser Leu Ser Ala Thr Val
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Val Val Tyr Val Asp Gly Ser Trp Glu Val Trp Ser Glu Trp Ser Val
20 25 30
Cys Ser Pro Glu Cys Glu His Leu Arg Ile Arg Glu Cys Thr Ala Pro
35 40 45
Pro Pro Arg Asn Gly Gly Lys Phe Cys Glu Gly Leu Ser Gln Glu Ser
50 55 60
Glu Asn Cys Thr Asp Gly Leu Cys Ile Leu Asp Lys Lys Pro Leu His
65 70 75 80
Glu Ile Lys Pro Gln Ser Ile Glu Asn Ala Ser Asp Ile Ala Leu Tyr
85 90 95
Ser Gly Leu Gly Ala Ala Val Val Ala Val Ala Val Leu Val Ile Gly
100 105 110
Val Thr Leu Tyr Arg Arg Ser Gln Ser Asp Tyr Gly Val Asp Val Ile
115 120 125
Asp Ser Ser Ala Leu Thr Gly Gly Phe Gln Thr Phe Asn Phe Lys Thr
130 135 140
Val Arg Gln Gly Asn Ser Leu Leu Leu Asn Ser Ala Met Gln Pro Asp
145 150 155 160
Leu Thr Val Ser Arg Thr Tyr Ser Gly Pro Ile Cys Leu Gln Asp Pro
165 170 175
Leu Asp Lys Glu Leu Met Thr Glu Ser Ser Leu Phe Asn Pro Leu Ser
180 185 190
Asp Ile Lys Val Lys Val Gln Ser Ser Phe Met Val Ser Leu Gly Val
195 200 205
Ser Glu Arg Ala Glu Tyr His Gly Lys Asn His Ser Arg Thr Phe Pro
210 215 220
His Gly Asn Asn His Ser Phe Ser Thr Met His Pro Arg Asn Lys Met
225 230 235 240
Pro Tyr Ile Gln Asn Leu Ser Ser Leu Pro Thr Arg Thr Glu Leu Arg
245 250 255
Thr Thr Gly Val Phe Gly His Leu Gly Gly Arg Leu Val Met Pro Asn
260 265 270
Thr Gly Val Ser Leu Leu Ile Pro His Gly Ala Ile Pro Glu Glu Asn
275 280 285
Ser Trp Glu Ile Tyr Met Ser Ile Asn Gln Gly Glu Pro Ser Glu Asn
290 295 300
Pro Ala Asn Lys Gly Ser Asn Ser Leu Leu Lys Asn Thr Tyr Ala Ile
305 310 315 320
Gly Gly Lys Ile Ser Arg His Leu Gly Ser Ser Arg
325 330

<210> 23

<211> 966

<212> DNA

<213> homo sapiens

<400> 23

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gatgggagct ggaaagtgtg gagcgaatgg tccgtctgca gtccagagtg tgaacatttg 120
cggatccggg agtgcacagc accacccccc agaaatgggg gcaaattctg tgaaggctca 180
agccaggaat ctgaaaactg cacagatggt ctttgcattcc taggcattga gaatgccagc 240

gacattgctt	tgtactcgaa	cttgggtgct	gccgtcggtgg	ccgttgcagt	cctggtcatt	300
gggtgtcaccc	tttacagacg	gagccagagt	gactatggcg	tggacgtcat	tgactcttct	360
gcattgacag	gtggcttcca	gaccttcaac	ttcaaaaacag	tccgtcaagg	taactccctg	420
ctcctgaatt	ctgccatgca	gccagatctg	acagtgagcc	ggacatacag	cggaccatc	480
tgtctgcagg	accctctgga	caaggagctc	atgacagagt	cctcactctt	taaccctttg	540
tcggacatca	aagtgaaagt	ccagagctcg	ttcatggttt	ccctgggagt	gtctgagaga	600
gctgagtaacc	acggcaagaa	tcattccagg	actttcccc	atggaaacaa	ccacagctt	660
agtacaatgc	atcccagaaa	taaaatgccc	tacatccaaa	atctgtcatc	actccccaca	720
aggacagaac	tgaggacaac	tggtgtctt	ggcatttag	gggggcgcctt	agtaatgcca	780
aatacagggg	tgagcttact	cataccacac	ggtgccatcc	cagaggagaa	ttcttgggag	840
atttatatgt	ccatcaacca	aggtgaaccc	agtaaaatc	cagcaaacaa	aggatcaaat	900
agcttgttga	agaacacata	tgccattggg	ggaaaaataa	gcagacatct	gggttcttct	960
cgctga						966

<210> 24

<211> 321

<212> PRT

<213> homo sapiens

<400> 24

Met	Ala	Ala	Asn	Ile	Val	Ala	Lys	Arg	Arg	Ser	Leu	Ser	Ala	Thr	Val
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Val	Val	Tyr	Val	Asp	Gly	Ser	Trp	Glu	Val	Trp	Ser	Glu	Trp	Ser	Val
							20		25			30			
Cys	Ser	Pro	Glu	Cys	Glu	His	Leu	Arg	Ile	Arg	Glu	Cys	Thr	Ala	Pro
						35		40			45				
Pro	Pro	Arg	Asn	Gly	Gly	Lys	Phe	Cys	Glu	Gly	Leu	Ser	Gln	Glu	Ser
						50		55			60				
Glu	Asn	Cys	Thr	Asp	Gly	Leu	Cys	Ile	Leu	Gly	Ile	Glu	Asn	Ala	Ser
						65		70		75			80		
Asp	Ile	Ala	Leu	Tyr	Ser	Gly	Leu	Gly	Ala	Ala	Val	Val	Ala	Val	Ala
						85		90			95				
Val	Leu	Val	Ile	Gly	Val	Thr	Leu	Tyr	Arg	Arg	Ser	Gln	Ser	Asp	Tyr
						100		105			110				
Gly	Val	Asp	Val	Ile	Asp	Ser	Ser	Ala	Leu	Thr	Gly	Gly	Phe	Gln	Thr
						115		120			125				
Phe	Asn	Phe	Lys	Thr	Val	Arg	Gln	Gly	Asn	Ser	Leu	Leu	Leu	Asn	Ser
						130		135			140				
Ala	Met	Gln	Pro	Asp	Leu	Thr	Val	Ser	Arg	Thr	Tyr	Ser	Gly	Pro	Ile
						145		150		155			160		
Cys	Leu	Gln	Asp	Pro	Leu	Asp	Lys	Glu	Leu	Met	Thr	Glu	Ser	Ser	Leu
						165		170			175				
Phe	Asn	Pro	Leu	Ser	Asp	Ile	Lys	Val	Lys	Val	Gln	Ser	Ser	Phe	Met
						180		185			190				
Val	Ser	Leu	Gly	Val	Ser	Glu	Arg	Ala	Glu	Tyr	His	Gly	Lys	Asn	His
						195		200			205				
Ser	Arg	Thr	Phe	Pro	His	Gly	Asn	Asn	His	Ser	Phe	Ser	Thr	Met	His
						210		215			220				
Pro	Arg	Asn	Lys	Met	Pro	Tyr	Ile	Gln	Asn	Leu	Ser	Ser	Leu	Pro	Thr
						225		230		235			240		
Arg	Thr	Glu	Leu	Arg	Thr	Thr	Gly	Val	Phe	Gly	His	Leu	Gly	Gly	Arg
						245		250			255				
Leu	Val	Met	Pro	Asn	Thr	Gly	Val	Ser	Leu	Leu	Ile	Pro	His	Gly	Ala
						260		265			270				
Ile	Pro	Glu	Glu	Asn	Ser	Trp	Glu	Ile	Tyr	Met	Ser	Ile	Asn	Gln	Gly
						275		280			285				

<210> 25
<211> 2043
<212> DNA
<213> homo sapiens

<400> 25	
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cggatccggg agtgcacagc accacccccc agaaaatgggg gcaaattctg tgaaggctca	180
agccagaat ctgaaaactg cacagatggt ctttgcattc tagataaaaa acctcttcat	240
gaaataaaac cccaaagcat tgagaatgcc agcgacattg ctttgtactc gggctgggt	300
gctgccgtcg tggccgttgc agtcctggtc attgggtgtca ccctttacag acggagccag	360
agtgaactatg gcgtggacgt cattgaactt tctgcatttga caggtggctt ccagacccctc	420
aacttcaaaa cagtccgtca agccaagaat atcatggAAC taatgatACA agaaaaatcc	480
tttggtaact cccgtctcct gaatttgcggc atgcagccag atctgacagt gagccggaca	540
taacagccggac ccattctgtct gcaggaccctt ctggacaagg agctcatgac agagtcctca	600
ctctttaacc ctttgcggg catcaaagtg aaagtccaga gctcgttcat ggttccctg	660
ggagtgctcg agagagctga gtaccacggc aagaatcattt ccaggactt tccccatggg	720
aacaaccaca gcttttagtac aatgcatttttcc agaaaataaaa tgccttacat caaaaatctg	780
tcatcaactcc ccacaaggac agaactgagg acaactgggt tctttggcca tttagggggg	840
cgcttagtaa tgccaaatac aggggtggc ttactcatac cacacgggtc catcccaagag	900
gagaattttt gggagattt aatgtccatc aaccaagggtg aaccggcctt ccagtcagat	960
ggctctgagg tgctcctgag tcctgaagtcc acctgtggtc ctccagacat gatgtcacc	1020
actccctttt cattgaccat cccgcactgt gcagatgtca gttctgagca ttggaaatatc	1080
catttaaaga agaggacaca gcagggcaaa tggggaggaag ttagtgcagt ggaagatgaa	1140
tctacatcct gtactgcct tttggacccc tttgcgtgtc atgtgtcctt ggacagctt	1200
gggacctatg cgctcaactgg agagccaaatc acagactgtg ccgtgaagca actgaagggt	1260
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gacaataccctt ctgtgcatt tcaggaagtg gtttcagatg aaaggcatca aggtggacag	1380
ctccttggaaag aaccaaaattt gctgcatttc aaagggaata ctttagtct tcagattct	1440
gtccttggata ttccccccattt cctctggaga attaaaccat tcactgcctt ccaggaagtc	1500
ccgttctccc gcgtgtgggt cagtaaccgg cagccccctgc actgtgcctt ctccctggag	1560
cgttataacgc ccactaccac ccagctgtcc tgcaaaaatct gcatttggca gctcaaggc	1620
catgaacaga tcctccaagt gcagacatca atccttagaga gtgaacgaga aaccatca	1680
ttcttcgcac aagaggacag cactttccctt gcacagactg gccccaaagc ttcaaaattt	1740
ccctactcca tcagacagcg gatttgtgtt acatttggata cccccaatgc caaaggcaag	1800
gactggcaga tggtagcaca gaaaacagc atcaacagga atttatctt tttcgctaca	1860
caaagttagcc catctgctgtt cattttgaac ctgtgggaag ctcgtcatca gcatgtatgg	1920
gatcttgcact ccctggccctg tgcccttgaa gagattggga ggacacacac gaaactctca	1980
aacatttcag aatcccagct tgatgaagcc gacttcaact acagcaggca aaatggactc	2040
taq	2043

<210> 26
<211> 680
<212> PRT
<213> homo sapiens

<400> 26
Met Ala Ala Asn Ile Val Ala Lys Arg Arg Ser Leu Ser Ala Thr Val

1	5	10	15												
Val	Val	Tyr	Val	Asp	Gly	Ser	Trp	Glu	Val	Trp	Ser	Glu	Trp	Ser	Val
				20				25			30				
Cys	Ser	Pro	Glu	Cys	Glu	His	Leu	Arg	Ile	Arg	Glu	Cys	Thr	Ala	Pro
				35				40			45				
Pro	Pro	Arg	Asn	Gly	Gly	Lys	Phe	Cys	Glu	Gly	Leu	Ser	Gln	Glu	Ser
				50				55			60				
Glu	Asn	Cys	Thr	Asp	Gly	Leu	Cys	Ile	Leu	Asp	Lys	Lys	Pro	Leu	His
				65				70			75			80	
Glu	Ile	Lys	Pro	Gln	Ser	Ile	Glu	Asn	Ala	Ser	Asp	Ile	Ala	Leu	Tyr
				85				90			95				
Ser	Gly	Leu	Gly	Ala	Ala	Val	Val	Ala	Val	Ala	Val	Leu	Val	Ile	Gly
				100				105			110				
Val	Thr	Leu	Tyr	Arg	Arg	Ser	Gln	Ser	Asp	Tyr	Gly	Val	Asp	Val	Ile
				115				120			125				
Asp	Ser	Ser	Ala	Leu	Thr	Gly	Gly	Phe	Gln	Thr	Phe	Asn	Phe	Lys	Thr
				130				135			140				
Val	Arg	Gln	Ala	Lys	Asn	Ile	Met	Glu	Leu	Met	Ile	Gln	Glu	Lys	Ser
				145				150			155			160	
Phe	Gly	Asn	Ser	Leu	Leu	Leu	Asn	Ser	Ala	Met	Gln	Pro	Asp	Leu	Thr
				165				170			175				
Val	Ser	Arg	Thr	Tyr	Ser	Gly	Pro	Ile	Cys	Leu	Gln	Asp	Pro	Leu	Asp
				180				185			190				
Lys	Glu	Leu	Met	Thr	Glu	Ser	Ser	Leu	Phe	Asn	Pro	Leu	Ser	Asp	Ile
				195				200			205				
Lys	Val	Lys	Val	Gln	Ser	Ser	Phe	Met	Val	Ser	Leu	Gly	Val	Ser	Glu
				210				215			220				
Arg	Ala	Glu	Tyr	His	Gly	Lys	Asn	His	Ser	Arg	Thr	Phe	Pro	His	Gly
				225				230			235			240	
Asn	Asn	His	Ser	Phe	Ser	Thr	Met	His	Pro	Arg	Asn	Lys	Met	Pro	Tyr
				245				250			255				
Ile	Gln	Asn	Leu	Ser	Ser	Leu	Pro	Thr	Arg	Thr	Glu	Leu	Arg	Thr	Thr
				260				265			270				
Gly	Val	Phe	Gly	His	Leu	Gly	Gly	Arg	Leu	Val	Met	Pro	Asn	Thr	Gly
				275				280			285				
Val	Ser	Leu	Leu	Ile	Pro	His	Gly	Ala	Ile	Pro	Glu	Glu	Asn	Ser	Trp
				290				295			300				
Glu	Ile	Tyr	Met	Ser	Ile	Asn	Gln	Gly	Glu	Pro	Ser	Leu	Gln	Ser	Asp
				305				310			315			320	
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				325				330			335				
Met	Ile	Val	Thr	Thr	Pro	Phe	Ala	Leu	Thr	Ile	Pro	His	Cys	Ala	Asp
				340				345			350				
Val	Ser	Ser	Glu	His	Trp	Asn	Ile	His	Leu	Lys	Lys	Arg	Thr	Gln	Gln
				355				360			365				
Gly	Lys	Trp	Glu	Glu	Val	Met	Ser	Val	Glu	Asp	Glu	Ser	Thr	Ser	Cys
				370				375			380				
Tyr	Cys	Leu	Leu	Asp	Pro	Phe	Ala	Cys	His	Val	Leu	Leu	Asp	Ser	Phe
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Gly	Thr	Tyr	Ala	Leu	Thr	Gly	Glu	Pro	Ile	Thr	Asp	Cys	Ala	Val	Lys
				405				410			415				
Gln	Leu	Lys	Val	Ala	Val	Phe	Gly	Cys	Met	Ser	Cys	Asn	Ser	Leu	Asp
				420				425			430				
Tyr	Asn	Leu	Arg	Val	Tyr	Cys	Val	Asp	Asn	Thr	Pro	Cys	Ala	Phe	Gln
				435				440			445				
Glu	Val	Val	Ser	Asp	Glu	Arg	His	Gln	Gly	Gly	Gln	Leu	Leu	Glu	Glu

450	455	460
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465	470	475
Val Leu Asp Ile Pro Pro Phe Leu Trp Arg Ile Lys Pro Phe Thr Ala		
485	490	495
Cys Gln Glu Val Pro Phe Ser Arg Val Trp Cys Ser Asn Arg Gln Pro		
500	505	510
Leu His Cys Ala Phe Ser Leu Glu Arg Tyr Thr Pro Thr Thr Gln		
515	520	525
Leu Ser Cys Lys Ile Cys Ile Arg Gln Leu Lys Gly His Glu Gln Ile		
530	535	540
Leu Gln Val Gln Thr Ser Ile Leu Glu Ser Glu Arg Glu Thr Ile Thr		
545	550	555
Phe Phe Ala Gln Glu Asp Ser Thr Phe Pro Ala Gln Thr Gly Pro Lys		
565	570	575
Ala Phe Lys Ile Pro Tyr Ser Ile Arg Gln Arg Ile Cys Ala Thr Phe		
580	585	590
Asp Thr Pro Asn Ala Lys Gly Lys Asp Trp Gln Met Leu Ala Gln Lys		
595	600	605
Asn Ser Ile Asn Arg Asn Leu Ser Tyr Phe Ala Thr Gln Ser Ser Pro		
610	615	620
Ser Ala Val Ile Leu Asn Leu Trp Glu Ala Arg His Gln His Asp Gly		
625	630	635
Asp Leu Asp Ser Leu Ala Cys Ala Leu Glu Glu Ile Gly Arg Thr His		
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Thr Lys Leu Ser Asn Ile Ser Glu Ser Gln Leu Asp Glu Ala Asp Phe		
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<211> 2010

<212> DNA

<213> homo sapiens

<400> 27

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<211> 669

<212> PRT

<213> homo sapiens

<400> 28

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				20				25				30			
Cys	Ser	Pro	Glu	Cys	Glu	His	Leu	Arg	Ile	Arg	Glu	Cys	Thr	Ala	Pro
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Pro	Pro	Arg	Asn	Gly	Gly	Lys	Phe	Cys	Glu	Gly	Leu	Ser	Gln	Glu	Ser
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Glu	Asn	Cys	Thr	Asp	Gly	Leu	Cys	Ile	Leu	Gly	Ile	Glu	Asn	Ala	Ser
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Asp	Ile	Ala	Leu	Tyr	Ser	Gly	Leu	Gly	Ala	Ala	Val	Val	Ala	Val	Ala
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Val	Leu	Val	Ile	Gly	Val	Thr	Leu	Tyr	Arg	Arg	Ser	Gln	Ser	Asp	Tyr
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Gly	Val	Asp	Val	Ile	Asp	Ser	Ser	Ala	Leu	Thr	Gly	Gly	Phe	Gln	Thr
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Phe	Asn	Phe	Lys	Thr	Val	Arg	Gln	Ala	Lys	Asn	Ile	Met	Glu	Leu	Met
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Ile	Gln	Glu	Lys	Ser	Phe	Gly	Asn	Ser	Leu	Leu	Asn	Ser	Ala	Met	
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Gln	Pro	Asp	Leu	Thr	Val	Ser	Arg	Thr	Tyr	Ser	Gly	Pro	Ile	Cys	Leu
				165				170			175				
Gln	Asp	Pro	Leu	Asp	Lys	Glu	Leu	Met	Thr	Glu	Ser	Ser	Leu	Phe	Asn
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Pro	Leu	Ser	Asp	Ile	Lys	Val	Lys	Val	Gln	Ser	Ser	Phe	Met	Val	Ser
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				260				265			270				
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275	280	285													
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Cys	Gly	Pro	Pro	Asp	Met	Ile	Val	Thr	Thr	Pro	Phe	Ala	Leu	Thr	Ile
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Pro	His	Cys	Ala	Asp	Val	Ser	Ser	Glu	His	Trp	Asn	Ile	His	Leu	Lys
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Lys	Arg	Thr	Gln	Gln	Gly	Lys	Trp	Glu	Glu	Val	Met	Ser	Val	Glu	Asp
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Glu	Ser	Thr	Ser	Cys	Tyr	Cys	Leu	Leu	Asp	Pro	Phe	Ala	Cys	His	Val
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Cys	Asn	Ser	Leu	Asp	Tyr	Asn	Leu	Arg	Val	Tyr	Cys	Val	Asp	Asn	Thr
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Gln	Leu	Leu	Glu	Glu	Pro	Lys	Leu	Leu	His	Phe	Lys	Gly	Asn	Thr	Phe
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Ser	Leu	Gln	Ile	Ser	Val	Leu	Asp	Ile	Pro	Pro	Phe	Leu	Trp	Arg	Ile
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Lys	Pro	Phe	Thr	Ala	Cys	Gln	Glu	Val	Pro	Phe	Ser	Arg	Val	Trp	Cys
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Pro	Thr	Thr	Thr	Gln	Leu	Ser	Cys	Lys	Ile	Cys	Ile	Arg	Gln	Leu	Lys
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					565				570			575			
Ile	Cys	Ala	Thr	Phe	Asp	Thr	Pro	Asn	Ala	Lys	Gly	Lys	Asp	Trp	Gln
					580			585			590				
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					595			600			605				
Thr	Gln	Ser	Ser	Pro	Ser	Ala	Val	Ile	Leu	Asn	Leu	Trp	Glu	Ala	Arg
610								615			620				
His	Gln	His	Asp	Gly	Asp	Leu	Asp	Ser	Leu	Ala	Cys	Ala	Leu	Glu	Glu
625								630			635			640	
Ile	Gly	Arg	Thr	His	Thr	Lys	Leu	Ser	Asn	Ile	Ser	Glu	Ser	Gln	Leu
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<212> DNA

<213> homo sapiens

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<211> 666

<212> PRT

<213> homo sapiens

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35 40 45

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50 55 60

Glu Asn Cys Thr Asp Gly Leu Cys Ile Leu Asp Lys Lys Pro Leu His
65 70 75 80

Glu Ile Lys Pro Gln Ser Ile Glu Asn Ala Ser Asp Ile Ala Leu Tyr
85 90 95

Ser Gly Leu Gly Ala Ala Val Val Ala Val Leu Val Ile Gly
100 105 110

Val Thr Leu Tyr Arg Arg Ser Gln Ser Asp Tyr Gly Val Asp Val Ile

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Leu Asp Lys Glu Leu Met Thr Glu Ser Ser Leu Phe Asn Pro Leu Ser		
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Asp Ile Lys Val Lys Val Gln Ser Ser Phe Met Val Ser Leu Gly Val		
195	200	205
Ser Glu Arg Ala Glu Tyr His Gly Lys Asn His Ser Arg Thr Phe Pro		
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His Gly Asn Asn His Ser Phe Ser Thr Met His Pro Arg Asn Lys Met		
225	230	235
Pro Tyr Ile Gln Asn Leu Ser Ser Leu Pro Thr Arg Thr Glu Leu Arg		
245	250	255
Thr Thr Gly Val Phe Gly His Leu Gly Gly Arg Leu Val Met Pro Asn		
260	265	270
Thr Gly Val Ser Leu Leu Ile Pro His Gly Ala Ile Pro Glu Glu Asn		
275	280	285
Ser Trp Glu Ile Tyr Met Ser Ile Asn Gln Gly Glu Pro Ser Leu Gln		
290	295	300
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Pro Asp Met Ile Val Thr Thr Pro Phe Ala Leu Thr Ile Pro His Cys		
325	330	335
Ala Asp Val Ser Ser Glu His Trp Asn Ile His Leu Lys Lys Arg Thr		
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420	425	430
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Glu Glu Pro Lys Leu Leu His Phe Lys Gly Asn Thr Phe Ser Leu Gln		
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580	585	590
Gln Lys Asn Ser Ile Asn Arg Asn Leu Ser Tyr Phe Ala Thr Gln Ser		
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His Val Leu Leu Asp Ser Phe Gly Thr Tyr Ala Leu Thr Gly Glu Pro
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